UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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OFFICE OF ENVIRONMENTAL CLEANUP

MEMORANDUM

DATE: September 15, 2016

SUBJECT: Final Supplemental Groundwater Sampling and Data Evaluation – Response to Comments
Northwest Pipe Company
ECSI #138
August 23, 2016

FROM: Eva DeMaria, Remedial Project Manager

TO: Jim Orr, Project Manager
Oregon Department of Environmental Quality

Following are the United States Environmental Protection Agency's (EPA's) comments on the August 23, 2016 Final Supplemental Groundwater Sampling and Data Evaluation, Northwest Pipe Company, Portland, Oregon ECSI #138 (Final Work Plan) and letter with Northwest Pipe Company's (NWP's) response to Oregon Department of Environmental Quality (DEQ) and EPA's comments on NWP's December 18, 2015 Supplemental Groundwater Sampling and Data Evaluation Work Plan. The purpose of EPA's review was to evaluate if NWP's response to comments and Final Work Plan adequately address EPA's comments (dated January 13, 2016) on the December 18, 2015 work plan**.**

1. As stated in EPA's Specific Comment 4 on the December 2015 Revised Work Plan, sampling for geochemical parameters should be conducted during the wet and dry seasons to best represent the cyclical variation in redox conditions. NWP's response to Specific Comment 4 is that this sampling will be conducted during the first two quarterly sampling events (presumably September and December 2016) and then the results will be evaluated to potentially reduce analysis of these parameters during subsequent monitoring events. While EPA agrees with sampling of geochemical parameters during the first two quarterly sampling events, an additional sampling will be needed during the third quarterly sampling event (March 2017) to determine geochemical conditions late in the wet season when groundwater levels are highest at the site.

2. The Final Work Plan specifies dissolved iron as a natural attenuation parameter to be analyzed. Given that ferrous iron is the parameter used for evaluating conditions favorable for anaerobic biodegradation of chlorinated solvents in groundwater, EPA recommends that ferrous iron be analyzed in addition to or instead of the dissolved iron analysis that is currently proposed in the Final Work Plan.

3. The well diameter and borehole diameter are not provided for the Port of Portland wells T4S1MW-03S and T4SIMW-09. This information is needed for analysis of slug test results and should be documented in the work plan.

4. The 2005 Biochlor modeling input parameters are based on hydraulic information collected only at the NWP site and may not be representative of the downgradient Port of Portland property, which is the area where the Biochlor model is being applied. The Final Work Plan provides very limited documentation of the pumping tests and analysis used to derive the 4 feet/day hydraulic conductivity value used in the 2005 Biochlor modeling. This value does not appear to be consistent with the soils of the shallow aquifer described in the boring logs of Appendix A or the hydraulic conductivity estimates for the shallow aquifer at the neighboring T4 Slip 1 site and other Portland Harbor upland sites. New hydraulic conductivity and horizontal hydraulic gradient estimates from the upcoming slug tests and monitoring at NWP and Port of Portland wells should be calculated and used to update the Biochlor model, which will be used to estimate the extent of the NWP plume.